REMARKS

Reconsideration and allowance are requested. New claims 13-36 were previously added to this application. No claims are amended in this response.

Rejection of claims 13 - 36 Under 35 U.S.C. 103(a)

The Examiner rejects claims 13 - 36 under Section 103(a) as being unpatentable over U.S. Patent No. 5,970,449 to Alleva et al. ("Alleva et al.") in view of U.S. Patent No. 5,613,037 to Sukkar ("Sukkar"). Applicants respectfully traverse this rejection and submit that this combination of references fails to teach each claim limitation.

We start with claim 13. This claim recites a speech recognition method that comprises defining a numeric language including a subset of a vocabulary. Other steps in the method include defining first acoustical models for the numeric language at a first quality level and defining second acoustic models for other words in the vocabulary at a second quality level. The Examiner does not analyze claim 13 independently but after articulating a rejection of claim 17, the Examiner states that claims 13 - 16 and 28 - 36 "are similar in scope and content to claims 17 - 27, and are therefore rejected under similar rationale." Office Action, page 4. Applicants traverse this reasoning inasmuch as it simply reads out claim limitations that are included in claim 13 that are not included in claim 17. Specifically, claim 17 does not include the limitations of defining first acoustical models and second acoustical models at different quality levels. Therefore, the Examiner never compares the prior art to these important limitations in claim 13. For this reason alone, Applicant would expressly request allowance of this claim.

Applicants also note that it would be inappropriate to issue a Final Rejection in the next office action if such an office action included for the first time a rejection of claim 13 addressing the merits of the claim previously unaddressed.

Although the Examiner has not addressed claim 13 independently, Applicants will explain why the prior art fails to teach each of claim 13's claim limitations. Regarding Alleva et al., the Examiner cites col. 3, line 18 to col. 4, line 6; the Abstract; Figure 1; Figure 9; col. 1, lines 56 - 62; col. 6, linters 14 - 17 and 40 - 42; col. 5, lines 62 - 65 and col. 6, lines 43 - 45 for

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disclosure on a numeric language including a subset of a vocabulary. The Examiner combines Alleva et al. with Sukkar and asserts that Sukkar teaches a digit model for digit recognition and a second model, the filler model, for spoken words that do not contain digits (col. 3, line 19 - col. 4, line 22). As we shall see, these references fail to teach each of the limitations of claim 13.

Sukkar discusses a digit model and a filler model. However, Sukkar fails to teach that the first acoustical models are defined at a first quality level and the second defined acoustic models for other words in the vocabulary are at a second quality level. In fact, Sukkar teaches away from limitation in Column 5, lines 7 - 20 wherein he states:

> "each HMM model (digit and filler) is modeled as a continuous density left-to-right HMM which uses eight to ten states, depending on the specific word model, with fifteen Gaussian mixture components per states. The segmental k-means algorithm ... is used to estimate the HMM parameters and the well-known Viterbi decoding algorithm is employed to obtain the optimal HMM path."

Simply put, there is no suggestion or teaching in Sukkar that the different acoustic models are defined as having a first quality level and a second quality level. Sukkar teaches the same type and quality of acoustic models for a digit model and filler model. As explained above, since the Examiner does not address claim 13 independently in its merits, this limitation was not compared with the disclosure of Sukkar. Therefore, since the combination of references fails to teach each limitation of claim 13, Applicants submit that claim 13 is patentable and in condition for allowance.

Alleva et al. also fail to disclose defining a numeric language including a subset of the vocabulary that identifies digits in number strings and words that enable the interpretation and understanding of number strings. Alleva et al. discloses a text normalization process using a context-free grammar that operates on text generated from a speech recognition processor. As a general statement, claim 13's numeric language has first acoustic models and second acoustic models that are stored in an acoustic model database that is accessible by a speech recognition processor. The difference between claim 13 and Alleva et al. becomes clear in the first sentence of the Abstract of Alleva et al. which states: "A text normalizer normalizes text that is output from a speech recognizer." Therefore, although the text normalizer may have a digit rule (Fig. 9, feature 126 and feature 128; col. 6) that normalizes digit relates words like "five" and converts

them to the number "5", this disclosure clearly differs from the invention of claim 13 for several reasons. First, Alleva et al.'s digit rules for normalization are not part of a "speech recognition method" as the preamble of claim 13 makes clear. Second, the digit rules for normalization take text generated from a speech recognizer and operate on that text. The normalization process of Alleva et al. therefore does not contemplate nor suggest acoustic models for a numeric language that is accessible by a speech recognition processor for the process of speech recognition. Alleva et al. disclose an absolute post-speech recognition normalization process as it relates to digital processing rules. Further, while Alleva et al. does disclose a speech recognition process in general, they switch their focus to the post-processing normalization when the digit rules are discussed. For this reason, Applicants traverse the Examiner's argument that both speech recognition and a numeric language with acoustic models for the purpose of speech recognition are taught by Alleva et al.

Finally, Applicants dispute that a proper *prima facie* case of the proper motivation or suggestion to combine Alleva et al. with Sukkar has been established by the Examiner. MPEP 2142. Applicants note that the Examiner bears the burden of articulating why one of skill in the art would be motivated to combine references to arrive at the invention. The Examiner merely states Sukkar is in a similar field of endeavor, thus it would be obvious to implement the acoustic model of Sukkar in the recognition system of Alleval et al. Applicants respectfully submit that the hurdle established in the MPEP and case law requires more justification for combining references than that they are in a similar technical field.

Claims 14 - 16 each depend from claim 13 and recite further limitations therefrom. Therefore, Applicants submit that these claims are patentable inasmuch as their parent claim is patentable. Claim 16 also recites another step of defining a set of filler models that characterize out-of-vocabulary features. Under the doctrine of claim differentiation, there is an intended difference in scope between claims. See RF Delaware, Inc. v. Pac. Keystone Techs., Inc. 326 F3d 1255; 66 U.S.P.Q.2D 1593 (Fed. Cir. 2003). Accordingly, where claim 16 adds a set of defining a set of filler models, Applicants submit that claim 16 recites first acoustical models for the numeric language at a first quality level, second acoustical models at a second quality level,

and a set of filler models that characterize out-of-vocabulary features. Alleva et al. combined with Sukkar et al. do not teach all of these various acoustical models.

Claim 17 recites a speech recognition method, the method comprising performing a speech recognition process on the received speech to produce speech recognition results, the speech recognition process being based on a set of acoustical models that have been defined for a numeric language. As mentioned above, Alleva et al. teach a text normalization procedure that includes digit rules that act on text generated from a speech recognition process. Their disclosure does not teach a numerical language acoustic model used in the speech recognition process. The Examiner concedes this point on page 3 of the Office Action where he states "Alleva fails to explicitly teach a system comprising acoustic models utilized by the speech recognition process." Therefore, when the scope of Alleva et al.'s text normalization disclosure is compared to claim 17, it is clear that they fail to disclose the numeric language being a subset of a vocabulary as part of a speech recognition process. For this reason, Applicants submit that claim 17 is patentable and in condition for allowance.

Claims 18 - 27 each depend from claim 17 and recite further limitations therefrom. These claims further include several limitations discussed above. For example, claim 19 recites performing speech recognition based on a second set of acoustical models. Claim 20 recites the second set of acoustical models that are defined at a quality level different from the set of acoustical models for the numeric language. These limitations have been discussed above and are applied here.

Claim 21 recites the numeric language including digits, natural numbers, alphabets, re-starts and city/country name classes. The Examiner cites Fig. 9 of Alleva et al. to support the rejection of this claim. However, as discussed above, Alleva et al.'s text normalization occurs after the speech recognition process. Fig. 9 teaches the text normalization process and not a process of speech recognition using a numerical language with the features recited in claim 21. Accordingly, Applicants submit that Alleva et al. fail to disclose this claim's limitations. Similarly, the Examiner asserts that Fig. 9 teaches the limitation of a numeric recognition processor in claim 23. As mentioned above, the text normalization process or Alleva et al.

simply differs from a speech recognition (or numeric recognition) processor as recited in this claim. Fig. 9 of Alleva et al. is a post-numeric recognition process.

Accordingly, Applicants submit that claims 18 - 27 are patentable and in condition for allowance.

The system claims 28 - 36 includes system-related limitations similar to those set forth above. Therefore, Applicants submit that these claims are patentable as well.

CONCLUSION

Having addressed the rejection of claims 13 - 36, Applicants submit that the subject patent application is in condition for allowance. A Notice to that effect is earnestly solicited.

Respectfully submitted,

Dated: _Nov. 3, 203_   By: _Thomas M. Isaacson_

Correspondence Address: Thomas M. Isaacson
Samuel H. Dworetsky   Attorney for Applicants
AT&T Corp.   Reg. No. 44,166
P.O. Box 4110
Middletown, NJ 07728